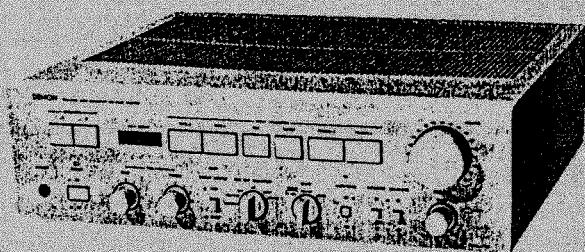


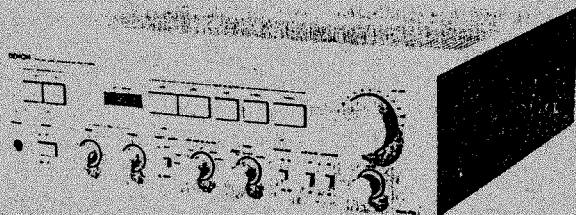
DENON

Hi-Fi Pre-Main Amplifier

SERVICE MANUAL MODEL **PMA-770/750** SOLID STATE PRE MAIN AMPLIFIER



PMA-770



PMA-750

CONTENTS

SPECIFICATIONS	1~2
BLOCK DIAGRAM	3
METHOD OF ADJUSTMENTS	4
EXPLODED VIEW OF CABINET & CHASSIS	5
EXPLODED VIEW OF PARTS LIST	6~8
PRINTED CIRCUIT BOARD PATTERNS AND PARTS LIST	
TONE EQ. UNIT ETC-453, 453J	9~12
REC & LCD UNIT ETC-454B, 454K	13~14
INPUT & EQ. UNIT ETC-452B, 452K	15~18
WIRING DIAGRAM	20, 21
CONNECTION DIAGRAM	19, 21

NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

- PMA-770

POWER AMPLIFIER SECTION

Circuit Type:	All stage direct DC servo circuit
Rated Output Power:	Both channel drive
	20 Hz to 20 kHz 100 W + 100 W (DIN, U.K., EUROPE, U.S.A.)
	(8 ohm Load)
	1 kHz (4 ohm Load) 150 W + 150 W (DIN, U.K., U.S.A.)
	1 kHz (4 ohm Load) 50 W + 50 W (IEC)
	(Subject to change by temperature test)
Total Harmonic Distortion:	0.008% (20 Hz - 20 kHz at -3 dB rated output 8 ohm Load)
Intermodulation Distortion:	0.02% (20 Hz - 20 kHz at rated output 8 ohm Load) (U.S.A.)
Output Band Width:	Below 7 kHz / 60 Hz : 1/4 0.002% (at amplitude output equivalent to rated output)
Transmission Characteristics:	5 Hz - 100 kHz (IHF THD 0.035%)
Input Sensitivity:	1 Hz - 250 kHz +0 dB
Input Impedance:	-3 dB (at 1 W output)
Output Impedance:	150 mV
Output Terminals:	47 k ohm
	0.08 ohm (1 kHz)
	Speaker: A and B Load 4 - 16 ohm
	A + B Load 8 - 16 ohm
	Headphone/Stereo headphone

EQUALIZER AMPLIFIER SECTION

Equalizer Amplifier Output:	Maximum Output: 10 V (at 47 k ohm Load)
	Rated Output: 150 mV
	Total harmonic wave distortion: below 0.002% (at 1 kHz, 8 V output)
Input Sensitivity/Input Impedance:	PHONO-1, 2 MM 2.5 mV 47 k ohm
	MC 125 μ V 100 ohm
	TUNER 150 mV 47 k ohm
	AUX, TAPE 150 mV 47 k ohm
RIAA Deviation:	PHONO-1, 2 MM within ± 0.2 dB (20 Hz - 100 kHz)
	MC within ± 0.2 dB (20 Hz - 100 kHz)
OVERALL CHARACTERISTICS	
SN Ratio (IHFA Network):	PHONO-1, 2 MM 90 dB (input terminals short-circuited for 2.5 mV input)
	MC 73 dB (input terminals short-circuited for 250 μ V input)
	TUNER, TAPE, AUX: 110 dB (input terminals short-circuited)
Tone Control Adjustable Range:	BASS 100 Hz ± 8 dB
	TREBLE 10 kHz ± 8 dB
Filtering Characteristics:	SUBSONIC 18 Hz, 6 dB/oct
Loudness Characteristics:	Low frequency 100 Hz + 7 dB
	High frequency 10 kHz + 6 dB

AC OUTLET:
(For U.S.A. and Canada)

POWER SOURCE:	SWITCHED x 2, 100 W (Total)
	UNSWITCHED x 1, 250 W
	Germany and France AC 220 V, 50 Hz; U.K. AC 240 V, 50 Hz;
	U.S.A. AC 120 V, 60 Hz; Hong Kong AC 200V, 50 Hz
POWER CONSUMPTION:	270 W (U.S.A.); 400 W (IEC); 290 W (Hong Kong);
DIMENSIONS:	800 W Maximum Output
	434 mm (W) x 132 mm (H) x 407 mm (D)
WEIGHT:	(including rubber feet, control knobs, and terminals)
	12 kg

Design and specifications are subject to change without prior notice.

NOTE: The following code correspond to the appropriate models.

E2 for Europe EF for France, EK for U.K., E3 for U.S.A., E3 for Canada and E1 for Hong Kong, Singapore.
This Service Manual is prepared based on PMA-770 E2.

SPECIFICATIONS

- PMA-750

POWER AMPLIFIER SECTION

Circuit Type:	All stage direct DC servo circuit
Rated Output Power:	Both channel drive
	20 Hz to 20 kHz 80 W + 80 W (DIN, U.K., EUROPE, U.S.A.)
	(8 ohm Load)
	1 kHz (4 ohm Load) 100 W + 100 W (DIN, U.K., U.S.A.)
	1 kHz (4 ohm Load) 50 W + 50 W (IEC)
	(Subject to change by temperature test)
Total Harmonic Distortion:	0.008% (20 Hz - 20 kHz at -3 dB rated output 8 ohm Load)
Intermodulation Distortion:	0.02% (20 Hz - 20 kHz at rated output 8 ohm Load) (U.S.A.)
Output Band Width:	Below 7 kHz / 60 Hz : 1/4 0.002% (at amplitude output equivalent to rated output)
Transmission Characteristics:	5 Hz - 100 kHz (IHF THD 0.035%)
Input Sensitivity:	1 Hz - 250 kHz +0 dB
Input Impedance:	-3 dB (at 1 W output)
Output Impedance:	150 mV
Output Terminals:	47 k ohm
	0.08 ohm (1 kHz)
	Speaker: A and B Load 4 - 16 ohm
	A + B Load 8 - 16 ohm
	Headphone/Stereo headphone

EQUALIZER AMPLIFIER SECTION

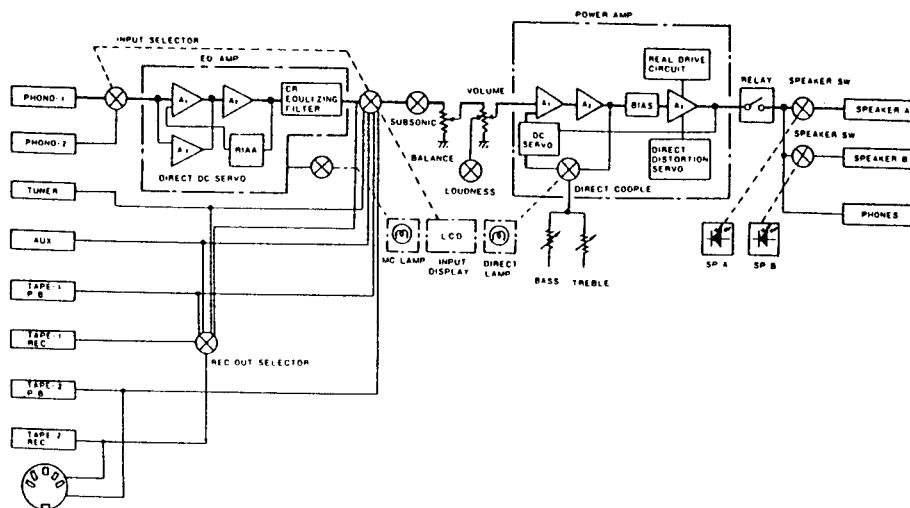
Equalizer Amplifier Output:	Maximum Output: 10 V (at 47 k ohm Load)
	Rated Output: 150 mV
	Total harmonic wave distortion: below 0.002% (at 1 kHz, 8 V output)
Input Sensitivity/Input Impedance:	PHONO MM 2.5 mV 47 k ohm
	MC 125 μ V 100 ohm
	TUNER 150 mV 47 k ohm
	AUX, TAPE 150 mV 47 k ohm
RIAA Deviation:	PHONO MM within ± 0.2 dB (20 Hz - 100 kHz)
	MC within ± 0.2 dB (20 Hz - 100 kHz)
OVERALL CHARACTERISTICS	
SN Ratio (IHFA Network):	PHONO MM 88 dB (input terminals short-circuited for 2.5 mV input)
	MC 72 dB (input terminals short-circuited for 250 μ V input)
	TUNER, TAPE, AUX: 110 dB (input terminals short-circuited)
Tone Control Adjustable Range:	BASS 100 Hz ± 8 dB
	TREBLE 10 kHz ± 8 dB
Filtering Characteristics:	SUBSONIC 18 Hz, 6 dB/oct
Loudness Characteristics:	Low frequency 100 Hz + 7 dB
	High frequency 10 kHz + 6 dB

AC OUTLET:	SWITCHED x 2, 100 W (Total)
POWER SOURCE:	UNSWITCHED x 1, 250 W
	Germany and France AC 220 V, 50 Hz; U.K. AC 240 V, 50 Hz;
	U.S.A. AC 120 V, 60 Hz; Hong Kong AC 200V, 50 Hz
POWER CONSUMPTION:	230 W (U.S.A.); 400 W (IEC); 200 W (Hong Kong);
DIMENSIONS:	680 W Maximum Output
	434 mm (W) x 132 mm (H) x 407 mm (D)
WEIGHT:	(including rubber feet, control knobs, and terminals)
	12 kg

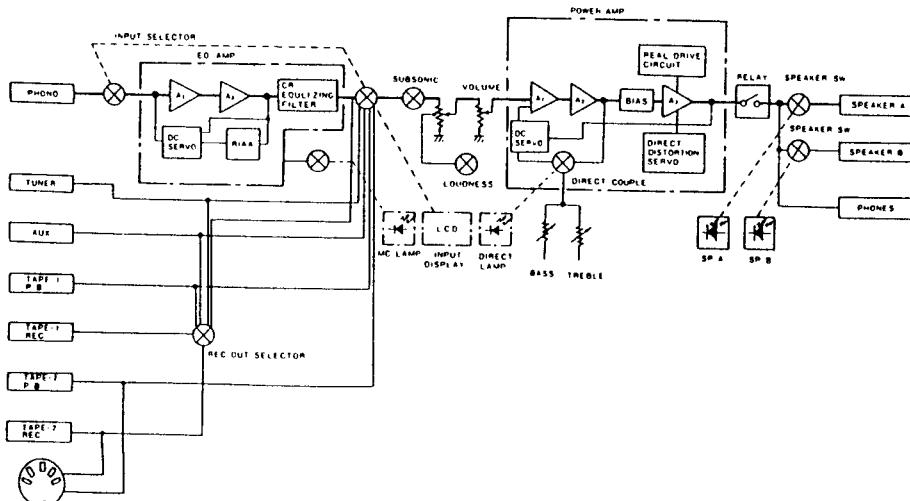
Design and specifications are subject to change without prior notice.

BLOCK DIAGRAM

- PMA-770

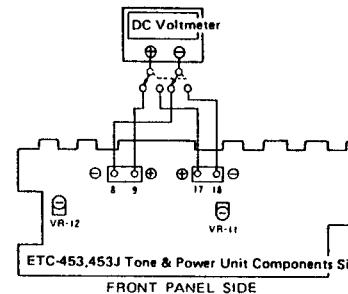


- PMA-750



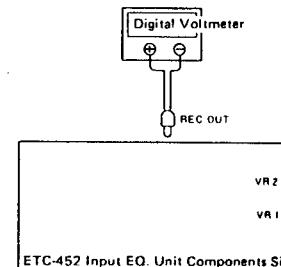
METHOD OF ADJUSTMENT

Schematic View of Tone Power for ETC-453 (PMA-770), ETC-453J (PMA-750)

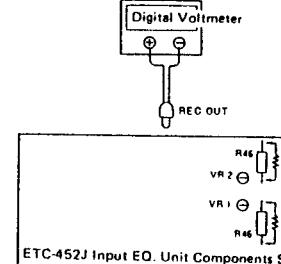


Schematic View for Input and Equalizer for ETC-452 (PMA-770), ETC-452J (PMA-750)

PMA-770



PMA-750



Adjustment of Idling Current (ETC-453, ETC-453J)

Preparation

1. Keep the unit away from direct wind blown by an air-conditioner and an electric fan. Keep the unit under normal conditions. Adjust the range of ambient temperature to 15 - 30°C.
2. Set the following switches as follows:
 - POWER (power switch) to off
 - VOLUME (volume control) to $-\infty$ (\sim min.)
 - DIRECT COUPLE (direct switch) to DIRECT
 - SPEAKER (speaker terminal) to no load (a speaker and a dummy resistor are not connected)

Adjustment

1. Remove the top cover and turn the variable resistors VR11 and VR12 of ETC-453 and ETC-453J (tone and power unit) in the clockwise direction until they stop. Connect a DC voltmeter between the negative terminal 9 and the positive terminal 8, and between the positive terminal 17 and the negative terminal 18.
2. Connect the power source cord to an AC outlet. Turn on the power switch. Turn the variable resistors UR11 and UR12 in the counterclockwise direction within one minute. Preset adjust the voltages at the respective test points as follows:
 - PMA-770 15 ± 2 mV
 - PMA-750 11 ± 2 mV
3. Set the variable resistors VR11 and VR12 2 to 3 minutes after the presetting as follows:
 - PMA-770 19 ± 1 mV
 - PMA-750 13 ± 1 mV

Adjustment of ETC-452 and ETC-452J

Preparation

1. Insert the short pin into the "phono" input terminal.
2. Connect a digital voltmeter between the "REC" output terminals (LCH and RCH). The output voltage at the digital voltmeter must be $0.01 - 1$ mV (DC).
3. Connect a resistor of 100 k ohms ($1/4$ W) between the resistors R45 and R46 of 10 M ohms of the unit in order to make measurement easy (only for PMA-750).
4. Set the RECOUT SELECTOR to the "phono" position and set the volume control to $-\infty$ (\sim min.).

Adjustment

1. Turn on the power switch. After two minutes, perform the following procedures.

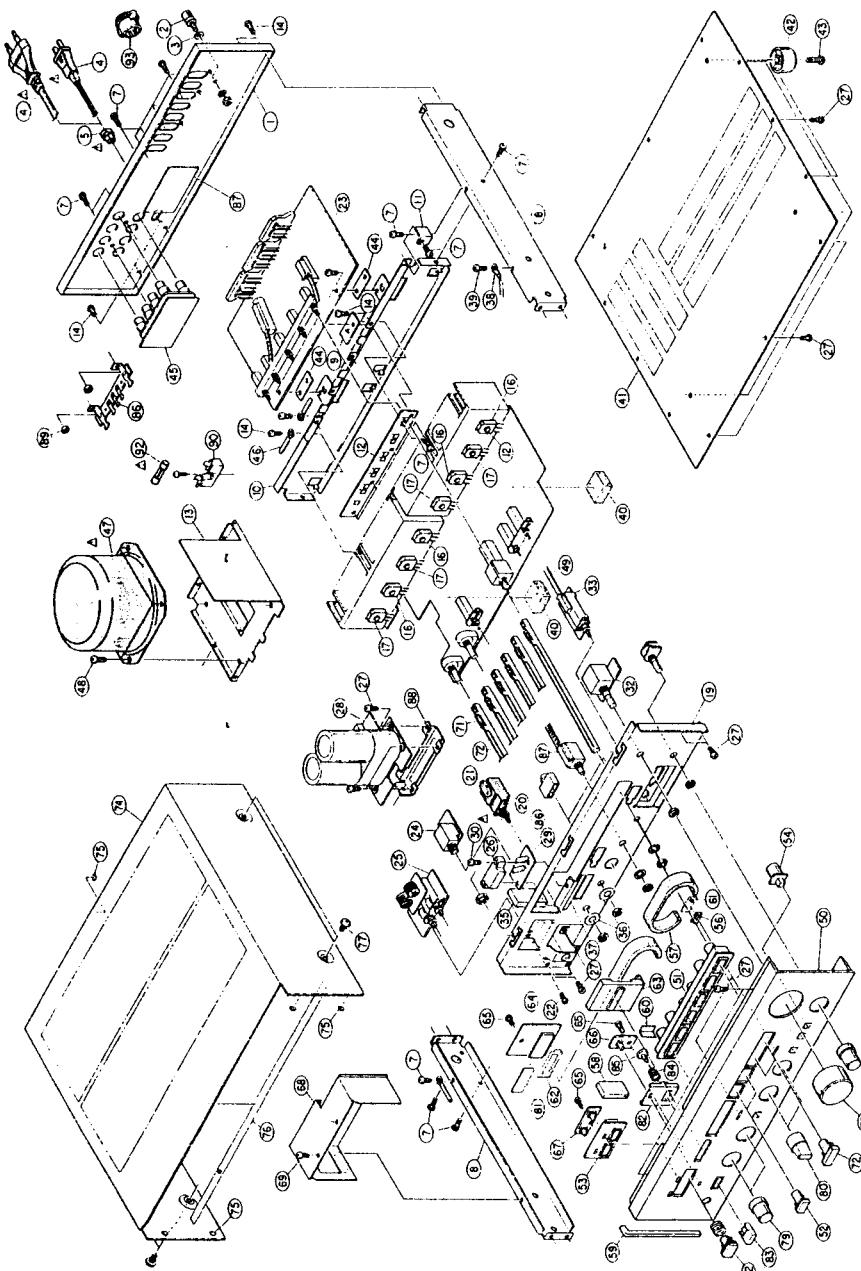
PMA-770, PMA-750

 - Adjust the variable resistor 1 (semi-fixed resistor of 100 k ohms) so that the output for LCH at the digital voltmeter reads less than 0.5 V (DC).
 - Adjust the variable resistor 2 (semi-fixed resistor of 100 k ohms) so that the output for RCH at the digital voltmeter reads less than 0.5 V (DC).

EXPLODED VIEW OF CHASSIS AND CABINET

Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.

This EXPLODED VIEW is prepared based on PMA-770E2.



EXPLODED VIEW OF PARTS LIST

(PMA-770)

Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions
1	1050460000	BACK PANEL	52	1130291102	PUSH KNOB (SP)
2	2050071016	TERMINAL ASS'Y	53	1460432107	PANEL BUSH (SP)
3	4770018001	WASHER	54	1130306000	PUSH KNOB (LOUDNESS) ASS'Y
4	2052002031	AC CORD	55	-	LENS
5	4450020058	CORD BUSH	56	1430224002	BLIND
6	4450020058	CORD BUSH	57	4610155011	BLIND
7	4730354035	TAPPING SCREW (2)3x8 MFN1B	58	4610155024	BLIND
8	4120733224	SIDE CHASSIS	59	4610155040	BLIND
9	4410355008	HOLD PLATE	60	1250015008	BLIND SHEET (B)
10	4110320113	MAIN CHASSIS	61	1430240002	FILTER
12	4410353000	SUPPORT BRACKET	62	1430230009	WINDOW PLATE
13	4110333003	SCHEET	63	1430228008	WINDOW
14	4770064107	TRANS CHASSIS ASS'Y	64	ETC-045483	LCD UNIT
15	4170153100	FIXING SCREW	65	4770096007	PUSH RIVET
16	2710150028	POWER RADIATOR	66	ETC-045485	POWER LED UNIT
17	2730298023	TRANSISTOR 2SA1146(R)/(I)	67	ETC-045494	SPEAKER LED UNIT
18	4700012022	TRANSISTOR 2SC2706(R)/(I)	68	4120988008	LAMP COVER
19	4110321206	CROSS PAN SCREW WITH W.S.W. 3x12	69	4470052009	FIX. SCREW
20	2124263022	FRONT CHASSIS	70	4120962008	CONNECTING BRACKET
21	2638003014	PUSH SWITCH	71	4630274066	SPRING
22	4700009008	CERAMIC CAP 0.0047/ μ F/450V	72	1130290103	PUSH KNOB (INPUT)
23	ETC-045281	CROSS PAN SCREW WITH S.	73	1130291102	PUSH KNOB (SP)
24	ETC-045282	WASHER 3x6	74	1020128000	TOP COVER
25	ETC-045283	INPUT & EQ. UNIT	75	1040034008	STOPPER
26	1430229007	HEADPHONE JACK UNIT	76	1220069008	SPACER
27	4730354019	SPEAKER SWITCH UNIT	77	4734801005	TAPPING SCREW (TRUS) 4x8
28	ETC-045481	L.C.D. LENS	78	1120265203	KNOB
29	ETC-045482	TAPPING SCREW (2)3x8	79	120359106	KNOB (A)
30	4730358015	RECT & LCD UNIT	80	1120360001	KNOB (B)
31	ETC-04531	LAMP UNIT	81	1430354019	COLOR PLATE
32	ETC-04532	TAPPING SCREW (2)3x14	82	1460430109	PANEL BUSH (POWER)
33	ETC-04533	TONE & POWER UNIT	83	1130171222	PUSH KNOB ASS'Y
34	2120197008	VOLUME UNIT	84	4630220007	SPRING
35	4610155037	CARTRIDGE SW UNIT	85	1190041002	STOPPER
36	1250014007	ROTARY REMOTE	86	2050089008	7P W TERMINAL
37	4150208004	BLIND	87	4150088004	INSULATING SHEET
38	2030176106	BLIND SHEET (A)	88	4700042005	CROSS PAN SCREW WITH S.
39	4700044005	INSULATING SHEET	89	4756008008	WASHER 3x8 (BLACK)
40	4610157080	WIRE ASS'Y	90	2020013004	NUT ϕ 3
41	1050450007	TAPPING SCREW WITH W. 3x8	91	5130159185	FUSE HOLDER
42	1048001002	CUSHION	92	2061015087	FUSE LABEL
43	4730355018	BOTTOM COVER	93	2038084009	FUSE (4A)
44	4150197005	FOOT	94	2412156003	5P CONNECTOR (DIN)
45	ETC-045284	TAPPING SCREW (2)3x10	95	4630274024	CARBON FILM RESISTOR
46	EP-6214	INSULATING SHEET			470 k ohm
47	2335241202	SPEAKER TERMINAL UNIT			SPRING
48	4730454032	CORD HOLDER			
49	4350052018	POWER TRANS.			
50	1440912003	TAPPING SCREW (2)4x8 (BLACK)			
51	1460433106	FLEXIBLE SLIDER			
		FRONT PANEL			
		PANEL BUSH (INPUT)			

Note: 1. See addendum list below for the parts with asterisk (*) in the Ref. No. and the other parts not included in this list.
2. The list is prepared based on E2.
3. • Mark same as PMA-750E2.

ADDENDUM LIST

Ref. No.	Part Name & Descriptions	E1 for Hong Kong	E2 for U.K.	Part No.
1	BACK PANEL	1050462008		
4	AC CORD	2006031026		
5	CORD BUSH	1460432107		
6	AC OUTLETS	1460432107		
20	PUSH SWITCH	2033908008		
21	CAPACITOR	2124263022		
22		2538003014		
23	INPUT & EQ.UNIT	ETC-0452D1		
24	HEADPHONE JACK UNIT	ETC-0452D2		
25	SPEAKER SWITCH UNIT	ETC-0452D3		
45	SPEAKER TERMINAL UNIT	ETC-0452D4		
47	POWER TRANS.	2335304107		
96	VOLTAGE SEL. SWITCH	2120188006		
97	CROSS PAN SCREW 3x6 (BLACK)	4711303034		
	PACKING & ACCESSORIES (not included EXPLODED VIEW)			
c	CARTON CASE	5010755049		

EXPLODED VIEW OF PARTS LIST

•(PMA-750)

Ref. No.	Part No.	Part Name & Descriptions
1	1050459008	BACK PANEL
2	2050071016	TERMINAL ASS'Y
3	4770018001	WASHER
4	2062002031	AC CORD
5	4450020005	CORD BUSH
6	—	—
7	4730354035	TAPPING SCREW (2)3x8 MFN1B
8	4120733208	SIDE CHASSIS
9	4410355008	MAIN CHASSIS
10	4110320100	SUPPORT BRACKET
11	4120965005	SHHEET
12	4410353000	TRANS CHASSIS ASS'Y
13	4110334002	FIXING SCREW
14	4770064107	POWER RADIATOR
15	4170156000	TRANSISTOR 2SA1187(O)/(Y)
16	2710143022	CROSS PAN SCREW WITH W.S.W. 3x12
17	2730243025	FRONT CHASSIS
18	4700012022	PUSH SWITCH
19	4110321206	CERAMIC CAP. 0.0047uF 450 W
20	2124263022	CROSS PAN SCREW WITH S. WASHER 3x6
21	2538003014	ETC-0452K1
22	4700009006	INPUT & EQ. UNIT
23	ETC-0452K2	HEADPHONE JACK UNIT
24	ETC-0452K3	SPEAKER SWITCH UNIT
25	1430229010	L.C.D. LENS
26	4730354019	TAPPING SCREW (2)3x8
27	4730354018	RECT & LCD UNIT
28	ETC-0454K1	LAMP UNIT
29	ETC-0454K2	TAPPING SCREW (2)3x14
30	4730359015	TONE & POWER UNIT
31	ETC-0453J1	VOLUME UNIT
32	ETC-0453J2	CARTRIDGE SW UNIT
33	ETC-0453J3	ROTARY REMOTE
34	2120197008	—
35	—	BLIND SHEET (A)
36	1250014007	INSULATING SHEET
37	4150208004	WIRE ASS'Y
38	2030176106	TAPPING SCREW WITH W 3x8
39	4700044005	CUSHION
40	4610157080	BOTTOM COVER
41	1050450007	FOOT
42	1048001002	TAPPING SCREW (2)3x10
43	4730355018	INSULATING SHEET
44	4150197005	SPEAKER TERMINAL UNIT
45	ETC-0452K4	CORD HOLDER
46	EP-6214	POWER TRANS
47	2335344002	TAPPING SCREW (2)4x18 (BLACK)
48	4730454032	FLEXIBLE SLIDER
49	4350052018	FRONT PANEL
50	1440928000	PANEL BUSH (INPUT)
51	1460455003	—

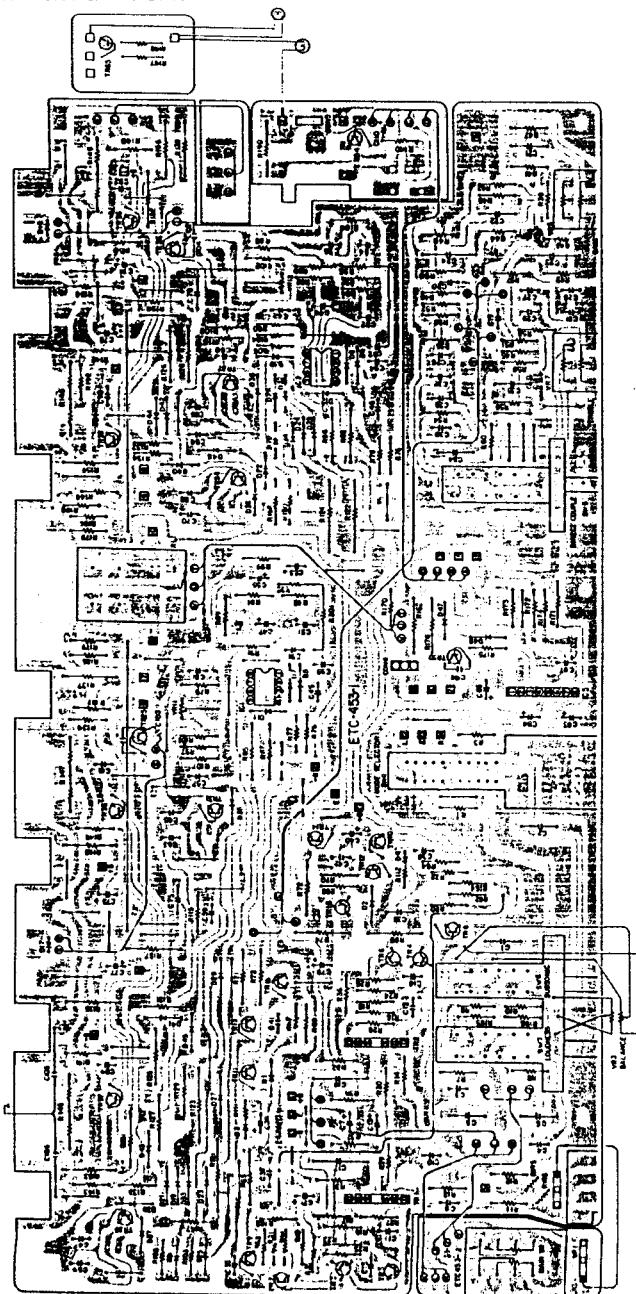
Note: 1. See addendum list below for the parts with asterisk (*) on the Ref. No. and the other parts not included in this list.
 2. The list is prepared based on E2.
 3. • Mark same as PMA-770E2.

ADDENDUM LIST

Ref. No.	Part Name & Descriptions	E1 for Hong Kong	EK for U.K.	Part No.
1	BACK PANEL	1050459008	1050461009	BACK PANEL
△ 2	AC CORD	2062020000	2006031026	AC CORD
△ 3	CORD BUSH	MD-2992H	MD-3802	CORD BUSH
△ 4	—	—	2033909008	—
△ 5	AC OUTLET	—	2124263022	AC OUTLET
△ 6	PUSH SWITCH	—	2124263022	PUSH SWITCH
△ 7	CAPACITOR	2538003014	2538003014	CAPACITOR
△ 8	INPUT & EQ. UNIT	ETC-0452K1	ETC-0452M1	INPUT & EQ. UNIT
△ 9	HEADPHONE JACK UNIT	ETC-0452K2	ETC-0452M2	HEADPHONE JACK UNIT
△ 10	SPEAKER SWITCH UNIT	ETC-0452K3	ETC-0452M3	SPEAKER SWITCH UNIT
△ 11	RECT & LCD UNIT	ETC-0454K1	ETC-0454M1	RECT & LCD UNIT
△ 12	LAMP UNIT	ETC-0454K2	ETC-0454M2	LAMP UNIT
△ 13	SPEAKER TERMINAL UNIT	ETC-0454K3	ETC-0454M3	SPEAKER TERMINAL UNIT
△ 14	POWER TRANS	2335344003	2335344003	POWER TRANS
△ 15	TAPPING SCREW	4700031016	4730454032	TAPPING SCREW
△ 16	LCD UNIT	ETC-0454K3	ETC-0454M3	LCD UNIT
△ 17	POWER LED UNIT	ETC-0454K5	ETC-0454M5	POWER LED UNIT
△ 18	SPEAKER LED UNIT	ETC-0454K4	ETC-0454M4	SPEAKER LED UNIT
△ 19	LED UNIT	ETC-0454K6	ETC-0454M6	LED UNIT
△ 20	LED UNIT	ETC-0454K7	ETC-0454M7	LED UNIT
△ 21	CONNECTING BRACKET	—	47120186006	CONNECTING BRACKET
△ 22	SPRING	—	4711303034	SPRING
△ 23	PUSH KNOB (INPUT)	—	—	PUSH KNOB (INPUT)
△ 24	PUSH KNOB (SP)	—	—	PUSH KNOB (SP)
△ 25	TOP COVER	—	—	TOP COVER
△ 26	STOPPER	—	—	STOPPER
△ 27	SPACER	—	—	SPACER
△ 28	TAPPING SCREW (TRUS) 4x8	—	—	TAPPING SCREW (TRUS) 4x8
△ 29	—	—	—	—
△ 30	—	—	—	—
△ 31	—	—	—	—
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△ 47	—	—	—	—
△ 48	—	—	—	—
△ 49	—	—	—	—
△ 50	—	—	—	—
△ 51	—	—	—	—
PACKING & ACCESSORIES (not included EXPLODED VIEW)				
c	CARTON CASE	5010755036	5010755036	
e	IMPORTANT LABEL	5130372001	—	
f	GUARANTEE CARD	5150230000	—	

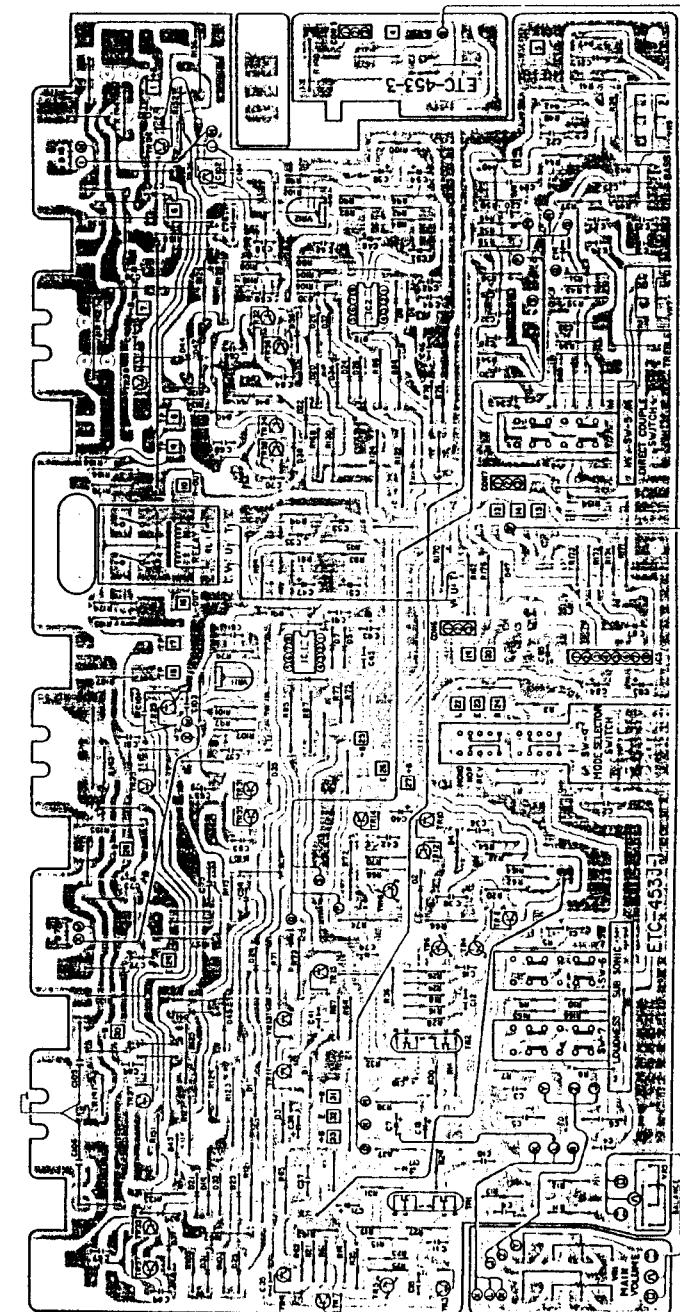
PRINTED WIRING BOARD PATTERNS AND PARTS LIST

- For PMA-770
- ETC-453 TONE & EQ. UNIT



- For PMA-750

ETC-453J TONE & EQ. UNIT



ETC-453 & ETC-453J TONE & EO. UNIT PARTS LIST

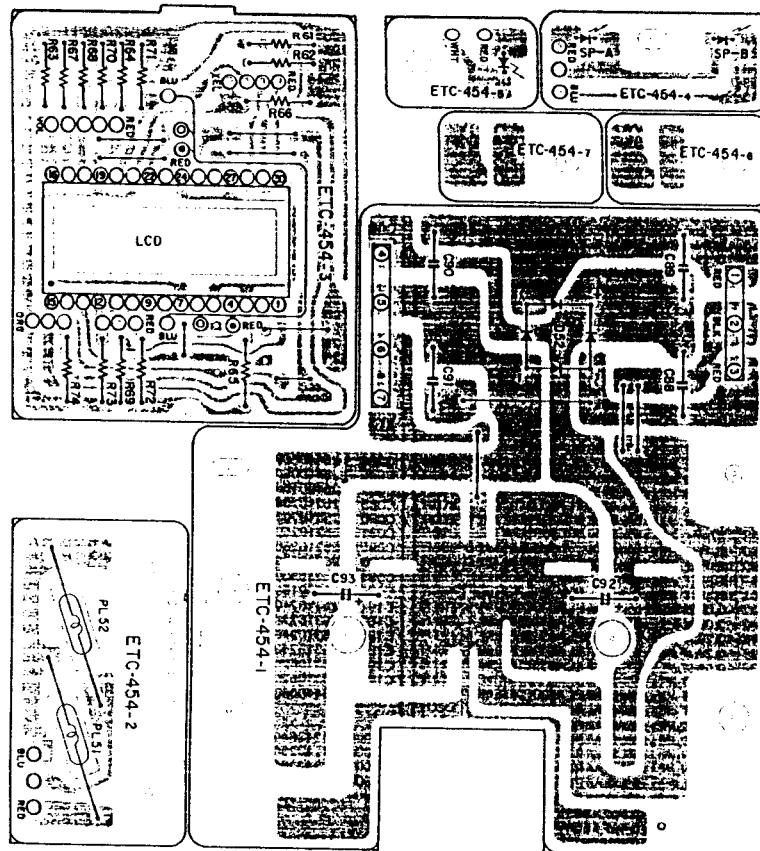
Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
RESISTORS (not included Carbon Film ±5%, KW Type)		
IC001	2630118001	NJM4560D INTEGRATED CIRCUIT
IC002	2630118001	NJM4560D INTEGRATED CIRCUIT
IC005	263012002	HA12002 INTEGRATED CIRCUIT
TR001	2750024033	μPA68H(L)(H) FIELD EFFECT
TR002	2750024033	μPA68H(L)(H) FIELD EFFECT
TR003	2730235020	2SC1841(F)(E) TRANSISTOR
TR004	2730235020	2SC1841(F)(E) TRANSISTOR
TR005	2730235020	2SC1941(F)(E) TRANSISTOR
TR006	2730235020	2SC1841(F)(E) TRANSISTOR
TR007	2710110000	2SA916(L) TRANSISTOR
TR008	2710110000	2SA916(L) TRANSISTOR
TR009	2710110000	2SA916(L) TRANSISTOR
TR010	2710110000	2SA916(L) TRANSISTOR
TR011	2730205005	2SC1941(L) TRANSISTOR
TR012	2730205005	2SC1941(L) TRANSISTOR
TR013	2740060007	2SD667A(C) TRANSISTOR
TR014	2740060007	2SD667A(C) TRANSISTOR
TR015	2720050003	2SB667A(C) TRANSISTOR
TR016	2720050003	2SB667A(C) TRANSISTOR
TR025	2730193015	2SC1815(BL) TRANSISTOR
TR026	2730193015	2SC1815(BL) TRANSISTOR
TR031	2730111063	2SC1213(D)(C) TRANSISTOR
TR032	2730111063	2SC1213(D)(C) TRANSISTOR
TR033	2710040073	2SA673A(D)(C) TRANSISTOR
TR034	2710040073	2SA673A(D)(C) TRANSISTOR
TR035	2730199027	2SC2238(Y)(I) TRANSISTOR
TR036	2730199027	2SC2238(Y)(I) TRANSISTOR
TR037	2710104029	2SA968(Y)(I) TRANSISTOR
TR038	2710104029	2SA968(Y)(I) TRANSISTOR
TR050	2730198044	2SC1815(Y)(I) TRANSISTOR
TR054	2710120005	2SA1015(Y) TRANSISTOR
TR065	2750170075	2SC1626(Y) TRANSISTOR
D001	2760171028	HV-23G(YW) DIODE
D002	2760171028	HV-23G(YW) DIODE
D003	2760216019	KB-265 DIODE
D04	2760216019	KB-265 DIODE
D05	2760049008	1S2076 DIODE
D06	2760049008	1S2076 DIODE
D007	2760049008	1S2076 DIODE
D008	2760049008	1S2076 DIODE
D011	2760224001	HZ-30 DIODE
D012	2760224001	HZ-30 DIODE
D017	2760049008	1S2076 DIODE
D018	2760049008	1S2076 DIODE
D019	2760049008	1S2076 DIODE
D020	2760049008	1S2076 DIODE
D021	2760049008	1S2076 DIODE
D022	2760049008	1S2076 DIODE
D023	2760049008	1S2076 DIODE
D024	2760049008	1S2076 DIODE
D025	2760049008	1S2076 DIODE
D026	2760049008	1S2076 DIODE
D027	2760049008	1S2076 DIODE
D028	2760049008	1S2076 DIODE
D029	2760049008	1S2076 DIODE
D030	2760049008	1S2076 DIODE
D031	2760049008	1S2076 DIODE
D032	2760049008	1S2076 DIODE
D033	2760049008	1S2076 DIODE
D034	2760049008	1S2076 DIODE
D035	2760049008	1S2076 DIODE
D036	2760049008	1S2076 DIODE
D037	2760049008	1S2076 DIODE
D038	2760049008	1S2076 DIODE
D039	2760221004	HZ-36 DIODE
D040	2760221004	HZ-36 DIODE
D041	2760049008	1S2076 DIODE
D042	2760049008	1S2076 DIODE
D043	2760049008	1S2076 DIODE
D044	2760049008	1S2076 DIODE
D045	2760221004	HZ-36 DIODE
D046	2760221004	HZ-36 DIODE
D047	2760049008	1S2076 DIODE
D049	2760221004	HZ-36 DIODE

(Con.)

Ref. No.	Part No.	Part Name & Descriptions
RESISTORS (not included Carbon Film ±5%, KW Type)		
CAPACITORS (not included Ceramic Capacitor 50 V Type)		
R152	2440037026	470 ohm ±5% 1W METAL OXIDE FILM
R153	2440013024	4.7 ohm ±5% 1W METAL OXIDE FILM
R154	2440013024	4.7 ohm ±5% 1W METAL OXIDE FILM
R155	2440013024	4.7 ohm ±5% 1W METAL OXIDE FILM
R156	2440013024	4.7 ohm ±5% 1W METAL OXIDE FILM
R157	2440022028	27 ohm ±5% 1W METAL OXIDE FILM
R158	2440022028	27 ohm ±5% 1W METAL OXIDE FILM
R162	2440041025	1 k ohm ±5% 1W METAL OXIDE FILM
R163	2412315051	51 ohm ±2% KW CARBON FILM
R164	2412315051	51 ohm ±2% KW CARBON FILM
R165	2420203003	10 M ohm ±10% KW CARBON COMPOSIT
R166	2420203003	10 M ohm ±10% KW CARBON COMPOSIT
R167	2410219007	27 k ohm ±5% KW CARBON FILM
R168	2410219007	27 k ohm ±5% KW CARBON FILM
R169	2440020026	380 ohm ±5% 1W METAL OXIDE FILM
R170	2440020026	820 ohm ±5% 1W METAL OXIDE FILM
R176	2440023027	33 ohm ±5% 1W METAL OXIDE FILM
R195	2412031018	510 k ohm ±5% KW CARBON FILM (STANDING)
R196	2412031018	510 k ohm ±5% KW CARBON FILM (STANDING)
SWITCHES		
C048	2544019005	220μF 16V ELECTROLYTIC
C051	2544019005	220μF 16V ELECTROLYTIC
C052	2544019005	220μF 16V ELECTROLYTIC
C053	2544016008	33μF 16V ELECTROLYTIC
C054	2544016008	33μF 16V ELECTROLYTIC
C055	2544016008	33μF 16V ELECTROLYTIC
C056	2544016008	33μF 16V ELECTROLYTIC
C057	2554139001	560μF ±5% 50V PLASTIC FILM
C058	2554139001	560μF ±5% 50V PLASTIC FILM
C059	2554139001	560μF ±5% 50V PLASTIC FILM
C060	2554139001	560μF ±5% 50V PLASTIC FILM
C061	2521010001	10pF ±0.5pF 50V MICA FILM
C062	2521010001	10pF ±0.5pF 50V MICA FILM
C063	2554165004	0.0068μF ±5% 50V PLASTIC FILM
C064	2554165004	0.0068μF ±5% 50V PLASTIC FILM
C065	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C066	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C067	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C068	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C069	2554165004	0.0068μF ±5% 50V PLASTIC FILM
C070	2554165004	0.0068μF ±5% 50V PLASTIC FILM
C071	254059078	2.2μF 63V ELECTROLYTIC
C073	254059036	4.7μF 63V ELECTROLYTIC
C074	254059036	4.7μF 63V ELECTROLYTIC
C075	2554169000	0.01μF ±5% 50V PLASTIC FILM
C076	2554169000	0.01μF ±5% 50V PLASTIC FILM
C077	254059036	4.7μF 63V ELECTROLYTIC
C078	254059036	4.7μF 63V ELECTROLYTIC
C079	254059078	2.2μF 63V ELECTROLYTIC
C081	2521079039	47pF ±10% 500V MICA FILM
C082	2521079039	47pF ±10% 500V MICA FILM
C083	2540440009	1μF 500V ELECTROLYTIC
C009	2554121006	100pF ±5% 50V PLASTIC FILM
C010	2554121006	100pF ±5% 50V PLASTIC FILM
C011	2554145008	0.001μF ±5% 50V PLASTIC FILM
C012	2554145008	0.001μF ±5% 50V PLASTIC FILM
C013	2554044009	1μF 50V ELECTROLYTIC
C015	2521026008	47pF ±5% 50V MICA FILM
C016	2521026008	47pF ±5% 50V MICA FILM
C017	2560110800	1μF ±10% 100V METALIZED
C018	2561008050	1μF ±10% 100V METALIZED
C019	2521010001	10pF ±0.5pF 50V MICA FILM
C020	2510100001	10pF ±0.5pF 50V MICA FILM
C021	2554183002	0.039μF ±5% 50V PLASTIC FILM
C022	2554183002	0.039μF ±5% 50V PLASTIC FILM
C023	25561122095	0.27μF ±5% 50V PLASTIC FILM
C024	25561122095	0.27μF ±5% 50V PLASTIC FILM
C025	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C026	2554161008	0.0047μF ±5% 50V PLASTIC FILM
C027	2554127000	180pF ±5% 50V PLASTIC FILM
C028	2554127000	180pF ±5% 50V PLASTIC FILM
C029	2554147006	0.0012μF ±5% 50V PLASTIC FILM
C030	2554147006	0.0012μF ±5% 50V PLASTIC FILM
C031	2554155001	0.0027μF ±5% 50V PLASTIC FILM
C032	2554155001	0.0027μF ±5% 50V PLASTIC FILM
C033	2554187008	0.056μF ±5% 50V PLASTIC FILM
C034	2554187008	0.056μF ±5% 50V PLASTIC FILM
C035	2521081043	10pF ±0.5pF 500V MICA FILM
C036	2521081043	10pF ±0.5pF 500V MICA FILM
C037	2554079048	0.01μF ±10% 100V PLASTIC FILM
C038	2554079048	0.01μF ±10% 100V PLASTIC FILM
C039	254060025	1μF 100V ELECTROLYTIC
C040	254060025	1μF 100V ELECTROLYTIC
C041	2554121006	100pF ±5% 50V PLASTIC FILM
C042	2554121006	100pF ±5% 50V PLASTIC FILM
C045	2554121006	100pF ±5% 50V PLASTIC FILM
C046	2554121006	100pF ±5% 50V PLASTIC FILM
C047	2544019005	220μF 16V ELECTROLYTIC
SW005	2124264005	1P PUSH SWITCH DIRECT COUPLE
SW006	2124328006	2P PUSH SWITCH LOUDNESS
SW007	2124328006	2P PUSH SWITCH SUBSONIC
SW008	2124329005	1P PUSH SWITCH CARTRIDGE
SW009	2120196009	ROTARY SWITCH MODE
OTHER PARTS		
R1001	2220796008	P.W. BOARD
RELAY	2140037009	RELAY
EP-5667H1	2035622008	TERMINAL USED 4
C040	205003000	205003000
C041	2554121006	37 LUG
C042	2554121006	PILOT LAMP 0.08A ASS'Y
C043	3930068009	PILOT LAMP 0.08A ASS'Y
C044	3930068009	PILOT LAMP 0.08A ASS'Y
C045	2544019005	16V ELECTROLYTIC

• For PMA-770

ETC-454B RECT & LCD UNIT

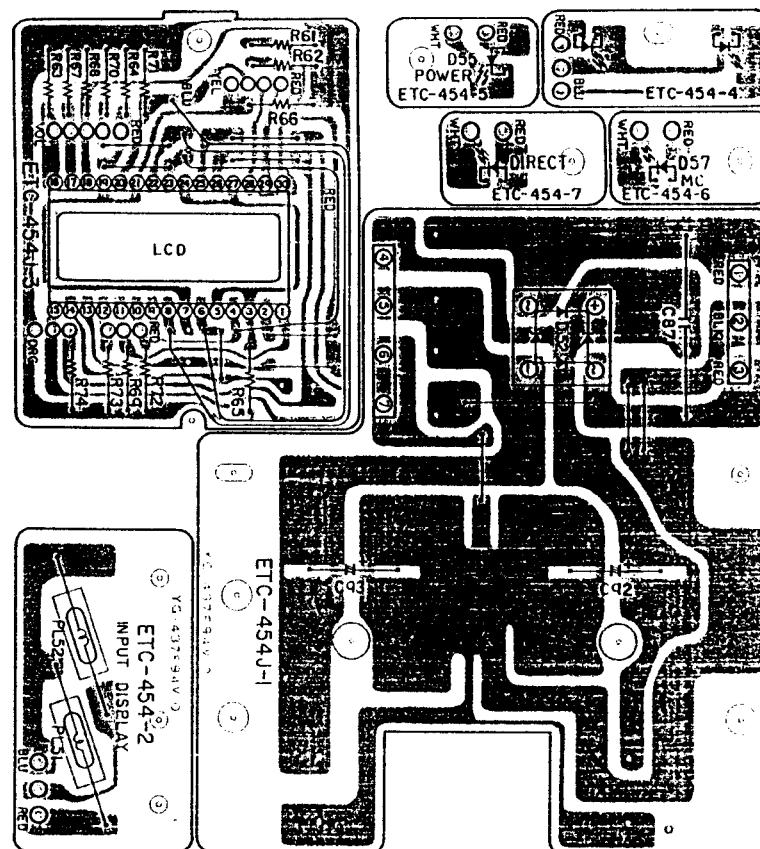


ETC-454B RECT & LCD UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
D052	2760233005	M4C-51
D053	3939149000	BG5531K GREEN DIODE
D054	3939149000	BG5531K GREEN LIGHT EMITTING DIODE
D055	3939149013	PR5531K RED LIGHT EMITTING DIODE
D056	3939130006	LCD DISPLAY
RESISTORS (not included Carbon Film ±5%, XW Type)		
C088	2561017019	0.01μF ±10% 630V METALLIZED
C089	2561017019	0.01μF ±10% 630V METALLIZED
C090	2561017019	0.01μF ±10% 630V METALLIZED
C091	2561017019	0.01μF ±10% 630V METALLIZED
C092	2546058006	22000μF/22000μF 63V ELECTROLYTIC
C093	2546058006	22000μF/22000μF 63V ELECTROLYTIC

• For PMA-750

ETC-454K (For E2), 454K (For EK), 454M (For E1) RECT & LCD UNIT

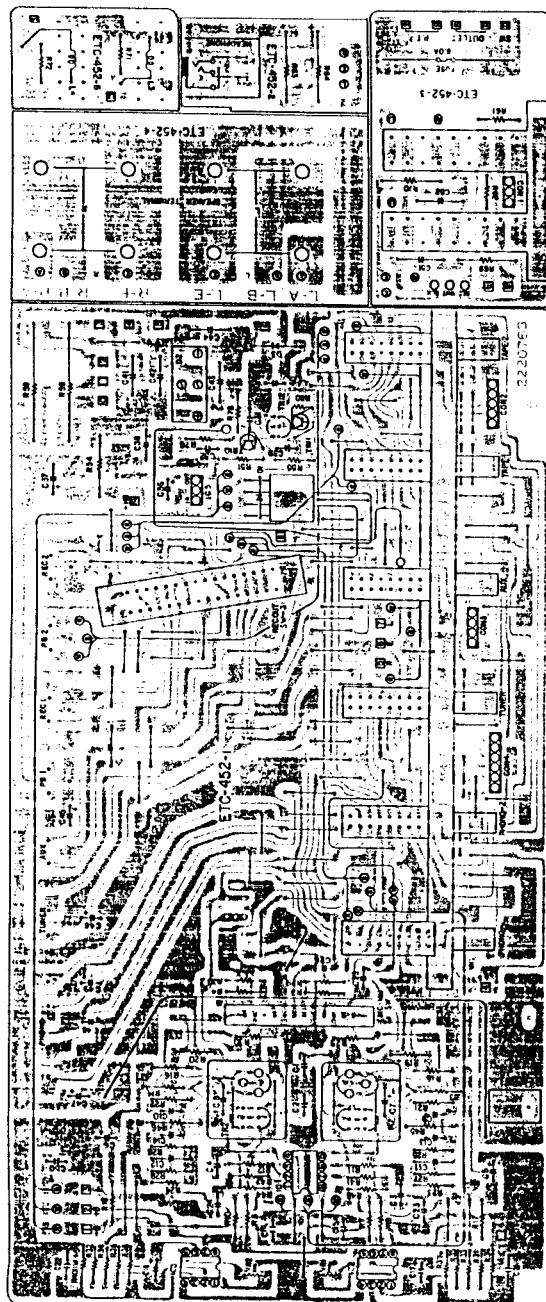


ETC-454K RECT & LCD UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
D052	2760233005	M4C-51
D053	3939149000	BG5531K GREEN DIODE
D054	3939149000	BG5531K GREEN LIGHT EMITTING DIODE
D055	3939149013	PR5531K RED LIGHT EMITTING DIODE
D056	3939149000	BG5531K GREEN LIGHT EMITTING DIODE
D057	3939149000	BG5531K GREEN LIGHT EMITTING DIODE
D058	3939130006	LCD DISPLAY
RESISTORS (not included Carbon Film ±5% XW Type)		
C087	2561017019	0.01μF ±10% 630V METALLIZED
C092	2546063004	15000/15000μF 63V ELECTROLYTIC
C093	2546063004	15000/15000μF 63V ELECTROLYTIC
OTHER PARTS		
PL051	2220765000	P.W. BOARD
PL052	2050087039	3P TERMINAL
	2050087042	4P TERMINAL
	2090008162	JUMPER P=20mm USED 1
	2090008120	JUMPER P=10mm USED 8
	2090008146	JUMPER P=5mm USED 2
	3930060010	PILOT LAMP (14V, 200 mA)
	3930060010	PILOT LAMP (14V, 200 mA)
	2034146035	3P CONNECTOR CORD FOR POWER
	2034147034	3P CONNECTOR CORD FOR SP
	2036082045	4P CONNECTOR CORD FOR LCD
	2038091047	5P CONNECTOR CORD FOR LCD
	2040075051	6P CONNECTOR CORD FOR LCD
	4120952102	CONDENSER BRACKET
	4730354019	TAPPING SCREW (2)3x8
	1430231008	COLOR PLATE

• For PMA-770

ETC-452B (For E2), 452D (For E1) INPUT & EQ. UNIT

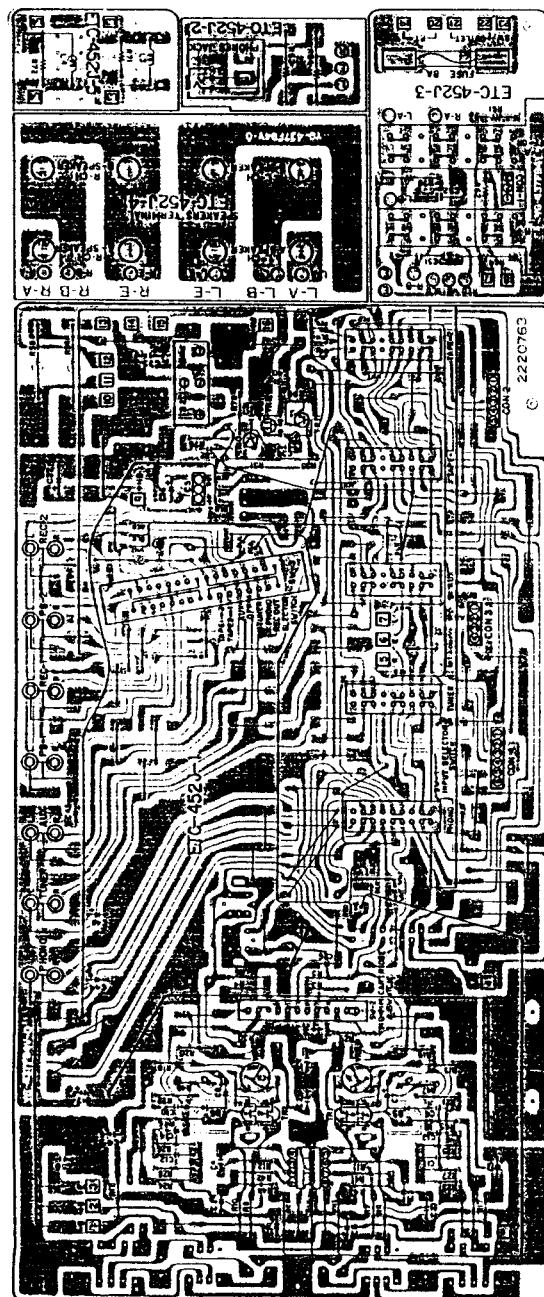


ETC-452B INPUT & EQ. UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions			
SEMICONDUCTORS								
IC001	2650034013	NJM4559D INTEGRATED CIRCUIT	C021	2554169000	0.01 μ F ±5% 50V PLASTIC FILM			
IC002	2630133002	MPC741C INTEGRATED CIRCUIT	C022	2554169000	0.01 μ F ±5% 50V PLASTIC FILM			
IC003	2630133002	MPC741C INTEGRATED CIRCUIT	C023	2554161008	0.0047 μ F ±5% 50V PLASTIC FILM			
IC005	2630155006	μ PC78M15 INTEGRATED CIRCUIT	C024	2554161008	0.0047 μ F ±5% 50V PLASTIC FILM			
TR001	2750029025	2SK240(BL)/(V) FIELD EFFECT	C025	2554164005	0.0062 μ F ±5% 50V PLASTIC FILM			
TR002	2750029025	2SK240(BL)/(V) TRANSISTOR	C026	2554164005	0.0062 μ F ±5% 50V PLASTIC FILM			
TR003	2750029025	2SK240(BL)/(V) FIELD EFFECT	C031	2539015001	0.1 μ F ±20% 25V CERAMIC			
TR004	2750029025	2SK240(BL)/(V) TRANSISTOR	C032	2539015001	0.1 μ F ±20% 25V CERAMIC			
TR010	2710102005	2SA1015(Y) TRANSISTOR	C036	2540419005	220 μ F 16V ELECTROLYTIC			
TR011	2710105002	2SA966(Y) TRANSISTOR	C037	254079029	1000 μ F 25V ELECTROLYTIC			
TR012	2750018010	2SK30A(O) FIELD EFFECT	C038	254041002	470 μ F 35V ELECTROLYTIC			
D001	2760049008	1S2076 DIODE	C039	2521018003	22nF ±5% 50V MICA FILM			
D002	2760239009	S1RBA20F DIODE	C040	2564039001	220 μ F 35V ELECTROLYTIC			
D003	2760237001	RV06 DIODE	C041	2554084020	0.068 μ F ±5% 100V PLASTIC FILM			
RESISTORS (not included Carbon film ±5% XW Type)								
R021	2412018002	3.9 k ohm ±2% XW CARBON FILM	C042	2554084020	0.068 μ F ±5% 100V PLASTIC FILM			
R022	2412018002	3.9 k ohm ±2% XW CARBON FILM	C043	2554084020	0.068 μ F ±5% 100V PLASTIC FILM			
R025	2412032091	47 k ohm ±2% XW CARBON FILM	C044	2554084020	0.068 μ F ±5% 100V PLASTIC FILM			
R026	2412032091	47 k ohm ±2% XW CARBON FILM	C045	254043000	0.47 μ F 50V ELECTROLYTIC			
R054	2440020020	18 ohm ±5% 1W METAL OXIDE FILM	C046	254043000	0.47 μ F 50V ELECTROLYTIC			
R058	2440136024	39 ohm ±5% 3.15W METAL OXIDE FILM	C047	254043000	0.47 μ F 50V ELECTROLYTIC			
R059	2440136024	39 ohm ±5% 3.15W METAL OXIDE FILM	C048	254043000	0.47 μ F 50V ELECTROLYTIC			
R063	2440087021	120 ohm ±5% 2W METAL OXIDE FILM	C049	254043000	0.47 μ F 50V ELECTROLYTIC			
R064	2440087021	120 ohm ±5% 2W METAL OXIDE FILM	C050	2531024003	0.01 μ F +80, -20% 50V CERAMIC			
R069	2440017020	10 ohm ±5% 1W METAL OXIDE FILM	C051	2551121067	0.022 μ F ±5% 50V PLASTIC FILM			
R070	2440017020	10 ohm ±5% 1W METAL OXIDE FILM	C052	2551121067	0.022 μ F ±5% 50V PLASTIC FILM			
R080	2442012023	4.7 ohm ±5% XW METAL OXIDE FILM	OTHER PARTS					
CAPACITORS (not included Ceramic 50 V Type)						2220763109	P.W. BOARD	
C001	2554123004	120pF ±5% 50V PLASTIC FILM	2050134908	TERMINAL PIN USED 22				
C002	2554123004	120pF ±5% 50V PLASTIC FILM	2090047903	JUMPER WIRE USED B1				
C003	2554145008	0.001 μ F ±5% 50V PLASTIC FILM	EP-5667H1	TERMINAL USED 2				
C004	2554145008	0.001 μ F ±5% 50V PLASTIC FILM	2090008133	JUMPER P=7.5mm USED 5				
C005	2544011003	220 μ F 10V ELECTROLYTIC	2090008120	JUMPER P=10mm USED 1				
C006	2544011003	220 μ F 10V ELECTROLYTIC	2090008117	JUMPER P=12.5mm USED 9				
C007	2541035008	1 μ F ±20% 35V ELECTROLYTIC	2090008146	JUMPER P=5mm USED 3				
C008	2541035008	1 μ F ±20% 35V ELECTROLYTIC	FEP-1261	JUMPER WIRE USED 3				
C009	2554145008	0.001 μ F ±5% 50V PLASTIC FILM	VR001	2116014030	SEMI FIXED RESISTOR 100 k ohm			
C010	2554145008	0.001 μ F ±5% 50V PLASTIC FILM	VR002	2116014030	SEMI FIXED RESISTOR 100 k ohm			
C011	2554085032	0.068 μ F ±2% 50V PLASTIC FILM	LR001	2140020003	READ RELAY L23(M)			
C012	2554085032	0.068 μ F ±2% 50V PLASTIC FILM	L003	2320017001	SHIELD COVER USED 2			
C013	2554085016	0.018 μ F ±2% 50V PLASTIC FILM	L004	2320017001	INDUCTOR			
C014	2554085016	0.018 μ F ±2% 50V PLASTIC FILM	4170043100	INDUCTOR				
C017	2544010004	100 μ F 10V ELECTROLYTIC	4730354019	RADIATOR				
C018	2544010004	100 μ F 10V ELECTROLYTIC	SW001	2124326105	TAPPING SCREW (2)3x8			
			SW002	2124330007	6P PUSH SWITCH INPUT SELECTOR			
			SW003	2124331006	SLIDE SWITCH (4-2) REMOTE CARTRIDGE			
			SW004	2124327007	2P PUSH SWITCH S.P. SWITCH			
			2048047007	2048047007 HEADPHONE JACK				
			2050144008	2050144008 8P TERMINAL FOR SP				
			2035622008	2035622008 3P CONNECTOR BASE FOR SP LED				
			2035622024	2035622024 4P MINI CON. PIN FOR LCD				
			2035622066	2035622066 5P MINI CON. PIN FOR LCD				
			2035622082	2035622082 6P CONNECTOR BASE FOR LCD				
			2050145007	2050145007 4P CONNECTOR BASE FOR PHONO				
			2040079002	2040079002 6P CONNECTOR BASE FOR AUX, TUN., TAPE				
			4140240001	4140240001 EARTH PLATE				

• For PMA-750

ETC-452K (For E2, EK), 452M (For E1) INPUT & EQ. UNIT

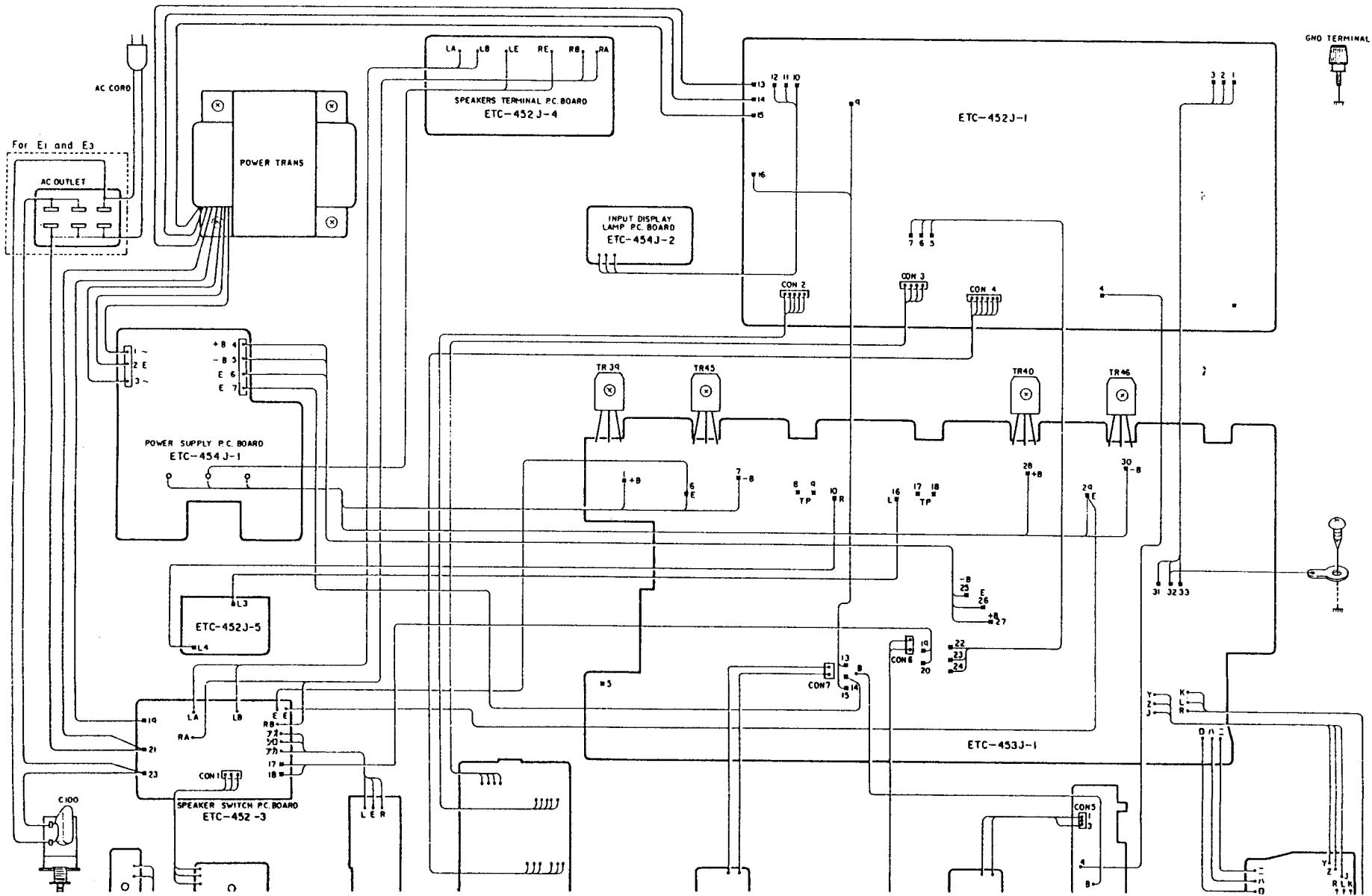


ETC-452K INPUT & EQ. UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS					
IC001	2650034013	NJM4559D INTEGRATED CIRCUIT	C025	2554164005	0.0062μF ±5% 50V PLASTIC FILM
IC005	2630155006	μPC78M15 INTEGRATED CIRCUIT	C026	2554164005	0.0062μF ±5% 50V PLASTIC FILM
TR001	2750029025	2SK240(BL)/(V) FIELD EFFECT TRANSISTOR	C031	2539015001	0.1μF ±20% 25V CERAMIC
TR002	2760029025	2SK240(BL)/(V) FIELD EFFECT TRANSISTOR	C032	2539015001	0.1μF ±20% 25V CERAMIC
TR010	2710102005	2SA1015(Y) TRANSISTOR	C035	2561017019	0.01μF ±10% 630V METALLIZED
TR011	2710105002	2SA966(Y) TRANSISTOR	C036	2544132005	10μF 16V ELECTROLYTIC
TR012	2750018010	2SK30A(O) FIELD EFFECT TRANSISTOR	C037	2544079029	1000μF 25V ELECTROLYTIC
D002	2760239009	S1RBA20F DIODE	C040	2544039001	220μF 35V ELECTROLYTIC
D003	2760237001	RV06 DIODE	C045	2544145005	0.47μF 50V ELECTROLYTIC
D005	2760049008	1S2076 DIODE	C046	2544145005	0.47μF 50V ELECTROLYTIC
D006	2760049008	1S2076 DIODE	C047	2544145005	0.47μF 50V ELECTROLYTIC
RESISTORS (not included Carbon Film ±5% 1W Type)					
R021	2412018002	3.9 k ohm ±2% 1W CARBON FILM	2220763109	P.W. BOARD	
R022	2412018002	3.9 k ohm ±2% 1W CARBON FILM	2050134908	TERMINAL PIN USED 21	
R025	2412032091	47 k ohm ±2% 1W CARBON FILM	2090047903	JUMPER WIRE USED 76	
R026	2412032091	47 k ohm ±2% 1W CARBON FILM	EP-5667H1	TERMINAL USED 2	
R045	2420203003	10 M ohm ±10% 1W CARBON COMPOSIT	2090008146	JUMPER P=5mm USED 4	
R046	2420203003	10 M ohm ±10% 1W CARBON COMPOSIT	2090008137	JUMPER P=7.5mm USED 7	
R058	2440077028	18 ohm ±5% 2W METAL OXIDE FILM	2090008120	JUMPER P=10mm USED 1	
R059	2440077028	18 ohm ±5% 2W METAL OXIDE FILM	2090008117	JUMPER P=12.5mm USED 6	
R063	2440029021	100 ohm ±5% 1W METAL OXIDE FILM	2090008104	JUMPER P=15mm USED 2	
R064	2440029021	100 ohm ±5% 2W METAL OXIDE FILM	2090008159	JUMPER P=17.5mm USED 1	
R069	2440017020	10 ohm ±5% 2W METAL OXIDE FILM	VR001	EP-5462H1	SOLID VR 100 ohm
R070	2440017020	10 ohm ±5% 2W METAL OXIDE FILM	VR002	EP-5462H1	SOLID VR 100 ohm
R080	2442012023	4.7 ohm ±5% 2W METAL OXIDE FILM	L003	2320017001	INDUCTOR
CAPACITORS (not included Ceramic 50V Type)					
C005	2544131006	220μF 10V ELECTROLYTIC	SW001	2124347106	SP PUSH SWITCH INPUT SELECTOR
C006	2544131006	220μF 10V ELECTROLYTIC	SW002	2124330007	SLIDE SWITCH (4-2) REMOTE CARTRIDGE
C007	2541003001	10μF ±20% 6.3V ELECTROLYTIC	SW003	2124331006	SLIDE SWITCH (4-6) REMOTE REC OUT
C008	2541003001	10μF ±20% 6.3V ELECTROLYTIC	SW004	2124327007	2P PUSH SWITCH S.P.SW.
C009	2554145008	0.001μF ±5% 50V PLASTIC FILM	2048047007	HEADPHONE JACK	
C010	2554145008	0.001μF ±5% 50V PLASTIC FILM	2050144008	8P TERMINAL	
C011	2554189006	0.068μF ±5% 50V PLASTIC FILM	2035622008	3P CONNECTOR BASE FOR SP LED	
C012	2554189006	0.068μF ±5% 50V PLASTIC FILM	2050136029	4P CONNECTOR BASE FOR LCD	
C013	2554175007	0.018μF ±5% 50V PLASTIC FILM	2050136032	5P CONNECTOR BASE FOR LCD	
C014	2554175007	0.018μF ±5% 50V PLASTIC FILM	2050136045	6P CONNECTOR BASE FOR LCD	
C023	2551120084	0.0047μF ±5% 50V PLASTIC FILM	2036084001	4P CONNECTOR BASE FOR PHONO	
C024	2551120084	0.0047μF ±5% 50V PLASTIC FILM	2040079002	6P CONNECTOR BASE FOR AUX, TUN, TAPE	
			4140240001	EARTH PLATE	
			FEP1261	JUMPER WIRE USED 3	

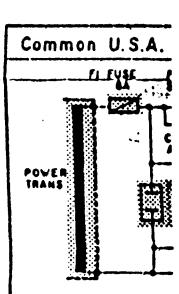
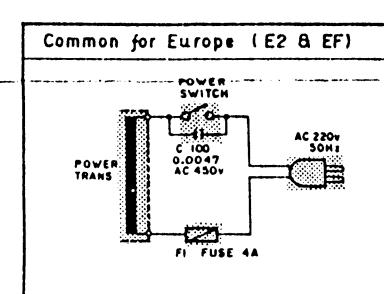
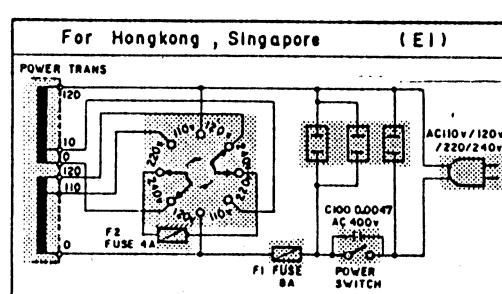
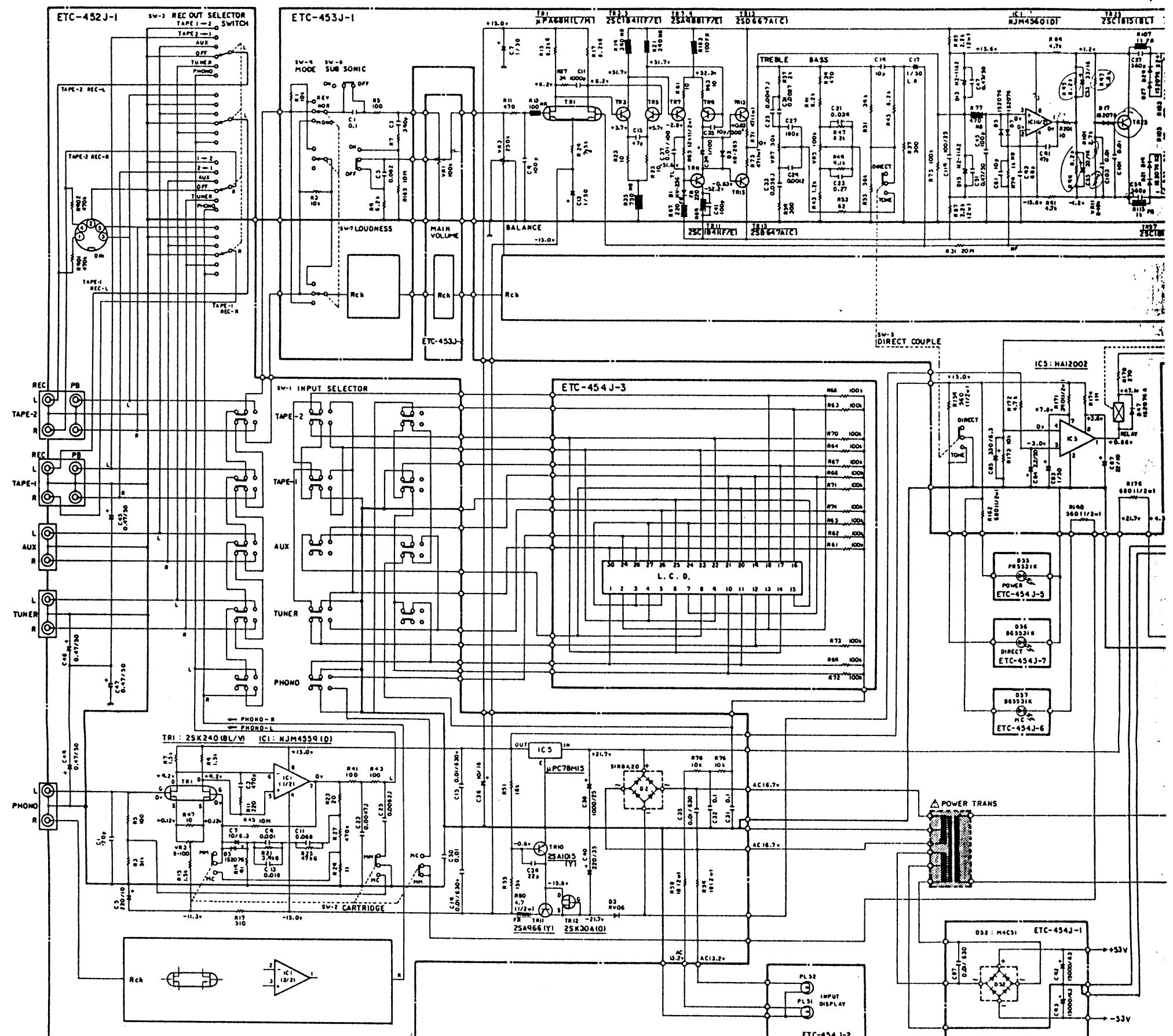
• For
ETI
• PMA-750

CONNECTION DIAGRAM



WIRING DIAGRAM

• PMA-750



NOTES :

All resistance values in ohm, K = 1,000 ohm,
M = 1,000,000 ohm.

All capacitance values in microfarad, P = micro-
micro farad.

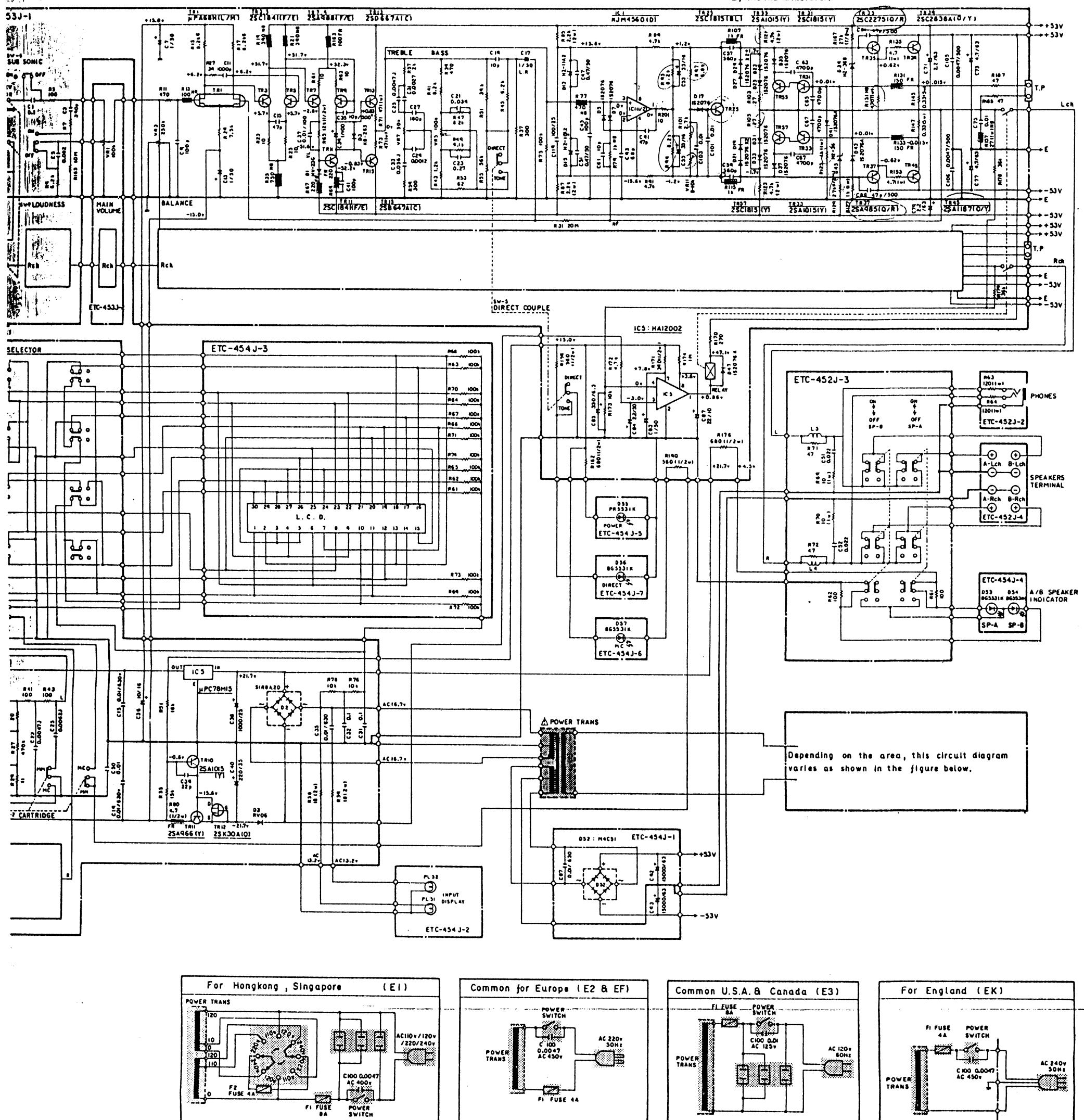
Every voltages and currents is measured at no signal
input condition.

Circuit and parts are subject to change without
prior notice.

Depending on the area, this circuit diagram
varies as shown in the figure below.

NOTE :
All voltage va
negative (-)
Checking of th
and negative
This schematic
without notice

  Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



NOTES

NOTES :
All resistance values in ohm, $K = 1,000$ ohm,
 $M = 1,000,000$ ohm.

All capacitance values in microfarad, $P = \mu$ micro-micro farad.

Every voltages and currents is measured at no signal input condition.

Circuit and parts are subject to change without prior notice.

Depending on the area, this circuit diagram varies as shown in the following table.

14282

NOTE: All voltage values in are measured between the specified points and

Checking of the value in must be measured between the specified point and negative (-) polarity power supply source, or damage may invite to the unit.

This schematic diagram is standard and subject to change for improvement without notice.